

cept on the upper lids, and the appetite was small on admission, but afterwards it became voracious.

The condition of the eyes, however, was the special feature of the case, and one which called for immediate relief. Dr. Johnston kindly came to see her with me, and divided the outer canthus of each eye with a pair of scissors; then on the following morning he made several incisions in the swollen mass of each eye by transfixing it with a narrow straight knife from the corneal margin to the edge of the lower lid. The swelling which followed considerably reduced the swelling, and as the division of the canthi had allowed the eyeballs to protrude still further, the patient was so much relieved that she slept well that night. The remainder of the treatment consisted in the application of warm boracic ointment, and subsequently the globe was covered by gold beater's skin on which a little boracic ointment was spread. There was no active spreading or ulceration of the cornea, and Dr. Johnston thought "the ulceration was partly due to exposure, and partly, perhaps, to pressure, although it was difficult to understand how the latter could act on the nourishment, or otherwise, of only one half of the cornea." His idea in carrying out his line of treatment was that he would reduce the pressure on the globe, cause the eye to retract, and above all make the patient more comfortable. He also feared, if the eyes were left in the state of congestion or strangulation which was present, that pan-ophthalmitis would set in. The result was satisfactory in so far as it averted destruction of all the tissues of the eye and gave relief to the girl, but although the swelling was somewhat diminished at the time, and acute symptoms subsided, the inflammation extended to the upper part of the cornea, and as the sight did not return and the swollen red mass still persists to some extent at the end of a year, it has been found necessary to place the girl in an asylum as she is blind.

In the records of the numerous cases which I have examined, I find no evidence that any eye complication so serious as this has ever before been observed. Gowers says:—"When the lids fail to cover the eyes, these are often dry in the morning—corneal inflammation is sometimes met with, apparently due to imperfect protection of the globe when the lids fail to meet; conjunctivitis is rare, and occasionally there has been opacity of the cornea, even sloughing, generally in both eyes, but in one before the other. Œdema of the lids is occasionally present, and may be associated with œdema of the conjunctiva." And Mr. Swanzy, in his Handbook on the Eye, says:—"The sensibility of the cornea is lessened. Ulcers of the cornea are not common, but are more frequently seen in men than in women. The exposure of the eye and

the dryness of the cornea are probably to a great extent the cause of ulceration when it occurs; but Sattler inclines to the belief that it is also largely due to paralysis of the nervous supply of the cornea."

In a paper by Dianoux on "The Ocular Lesions in Exophthalmic Goitre," read before the International Medical Congress at Copenhagen, in 1884, he expresses the opinion that stretching of the ciliary and optic nerves by the exophthalmos produces the internal eye lesions, which he classes under three heads—1st, the effects on motor organs, namely, dilatation of the pupil and paralysis of accommodation; 2nd, the effects on nutrition, namely, neuro-paralytic keratitis, papillary œdema and irido-chorioiditis; 3rd, the effects on sight, namely, mist, shimmering, and finally amblyopia.

While I have gone so fully into eye complications in this affection, it may be well to mention in detail the more commonly observed ocular phenomena—1st, exophthalmos, which is present in about 90 per cent. of the cases, and which may be unilateral or bilateral, or more marked on one side than the other, and which varies in degree according to the heart action; 2nd, von Graefe's lid-sign or impairment of the consensual movement of the upper eyelid in association with the eyeball on the patient looking downwards, and a modification of this has been noticed by Ramsay in the form of a spasmodic retraction of the upper lid after an imperfect descent; 3rd, Stellwag's sign, which consists in an incompleteness and diminished frequency of the involuntary act of winking; 4th, Dalrymple's sign or abnormal widening of the palpebral orifice, which is due to retraction of the upper lid—very rarely the lower lid has been retracted also; 5th, Möbius and others have observed paresis of the muscles that move the eyeballs, and even complete ophthalmoplegia has been noted; 6th, Tremor of the lids and tremor of the eyeballs have both been noticed, the former of little significance, as it is often seen in people in health, the latter a nystagmus which probably corresponds to the tremor of the body and limbs.

In this case of my own there was no secretion or appearance of acute inflammation, but the condition resembled rather that seen in the case of strangulated hæmorrhoids. And although there is some obscurity as to the cause of this serious complication, and as to its method of onset, we have at all events learned this lesson from it, that in all cases of Graves's disease where the exophthalmos

prevents the lids from meeting over the eyeballs, every precaution should be adopted by the medical attendant to lessen the corneal exposure and reduce the proptosis. The methods that have been found useful for these purposes are, tightly applied muslin bandages over the eyes, the application of tincture of iodine to the upper lids, and when the protrusion is very great, the eyelids may be stitched together, or even, in order to lessen the palpebral orifice, the upper and lower lids should be united in the region of both commissures, by vivifying their edges for some distance and stitching them together so as to bring about a permanent union. However, it is only right to mention that a young girl who was undergoing an operation of this sort died suddenly on the operating table at Guy's Hospital, in June, 1873, but this untoward result may scarcely be taken to prove more than that a tendency to sudden death exists in exophthalmic goitre.

Since the three cardinal symptoms of this affection were first grouped together by Graves as a separate and definite malady, many additional symptoms have been described, some of which, like tremor, are almost constantly present, while others are found with more or less varying frequency. I cannot enter upon these at present, but most of them have been mentioned by Dr. Foot in his particularly interesting and instructive lecture on Graves's disease which appears in the second series of *International Clinics*. He there also calls attention to the undoubted right of associating with this malady the name of its discoverer—Graves—rather than that of Basedow. So that it is interesting to find, in the most recently-published German treatise on Exophthalmic Goitre, an admission by the author, Dr. Mannheim, of Berlin, that in studying the history of the affection he discovered that Graves had known, recognised, and described the disease before Basedow, and that therefore one could not refuse to give him the priority and name the disease after him, "*Morbus Gravesii*," and this he adopts as the title of his work.

I could not attempt, within the space of a short paper, to discuss fully the various theories that have been put forward with regard to the pathology of this perplexing disease. But while it is almost universally accepted by writers on nervous diseases, and by pathologists generally, that the symptoms owe their origin to a functional or organic lesion of the central nervous system, but especially to that part of it—viz. the medulla oblongata, in which are situated the cardio-inhibitory, vaso-motor, respiratory, and other

involved centres, there are at the present day not a few who, following on the lines of Möbius, consider that the starting-point in the affection is the altered condition of the thyroid gland which, either by a hypersecretion or altered secretion, disposes of toxic agents to the blood, which in turn produce functional disturbances or minute pathological changes in the central nervous system. This latter view has lately received more attention on account of the recent researches that have been made in regard to the functions of the thyroid gland, but chiefly in regard to its atrophied state in producing the condition known as myxœdema, and to the highly successful results that have followed the treatment of this latter disease by some preparation of the gland itself when procured from animals.

In the first place I would mention briefly that the researches of Mr. Victor Horsley have gone to prove the importance of the thyroid gland as a blood-forming and metabolic agent. He says it forms, or rather secretes, from the blood a colloidal substance which is transmitted by the lymphatics from the acini of the gland back to the circulation, and that it is of special metabolic importance in early extra-uterine life, as shown by the more fatal effects of thyroidectomy in young animals as compared with older ones, so that its value falls as the general vital processes decrease. Its great importance in relation to health is shown by the effects that follow its removal in animals. These are—(1) a diminution in the corpuscular elements of the blood, and in the amount of its oxygen, with the presence of abnormal constituents in the plasma, such as mucin; (2) a general toxic state of the blood, which gives rise to excitatory and subsequently paralytic changes in the central nervous system, which are in turn evidenced by tremors, spasms, rigidity, and afterwards motor and sensory paralysis; and, in the third place, derangement of nutrition follows, as shown by emaciation, increase of mucin in the subcutaneous tissues, and even later, fibroid increase, with heat changes also, in which the temperature is at first above and afterwards below normal, and in which the symptoms are aggravated by cold and ameliorated by heat.

So much, therefore, for the importance of this gland in the preservation of the economy of the body. Undoubtedly there is an increase or perversion of its functions in Graves's disease which one might readily assume to be the cause of many of the secondary symptoms, but those who support the view—among whom are

Professor Greenfield and Dr. Byrom Bramwell, of Edinburgh—that the primary source of the malady has its origin in the altered gland, reason from the following data:—

1. The pathological state of the thyroid in exophthalmic goitre.
2. The presence in the nervous system—particularly in that part of it which, from the symptoms, one would suspect to be involved—of slight but widespread changes which are of a like nature to those seen in toxic diseases, such as hydrophobia and tetanus, and therefore suggesting that these changes in Graves's disease may also be of toxic origin.
3. A comparison of the clinical features of myxœdema, in which the gland is atrophied, with those of exophthalmic goitre, in which it is enlarged.
4. The beneficial effects on the disease of partial thyroidectomy.
5. The beneficial effects which follow medical treatment directed to reducing the size of the goitre.
6. The correspondence, in some important respects, of the phenomena of Graves's disease with those produced by artificial introduction of the thyroid secretion.

With regard to its pathological structure, Drs. Grainger Stewart and Gibson reported, at the British Medical Association, last August, the result of *post-mortem* examinations which had been made in three cases. And Prof. Greenfield, in "The Bradshaw Lecture," delivered before the Royal College of Physicians of London last November, recorded the result of his observations on six fatal cases.

In every instance there was a marked increase in the secreting structure of the gland, which Professor Greenfield considered bore the same relation to the normal gland as that which the mammary gland in lactation bears to itself when in a state of quiescence, and, in peculiar contrast to what has generally been accepted, the gland was found not to be very vascular—at least, the increase in vascularity was not more than is met with in a secreting mammary gland. Greenfield points out that great increase in the secreting tissue and greatly exaggerated function may be present without notable increase in volume. In advanced stages of the disease fibrous overgrowth may replace the secreting structure, and in that case one might expect a subsidence of the symptoms; or even if the glandular atrophy is extreme, myxœdema may ensue—a sequela which, it is true, has been sometimes observed. Coming to the next point in the argument. Although the changes found in the

nervous system are not by any means constant, still minute hæmorrhages and degenerative changes are frequently met with which closely resemble the conditions that are observed in diseases like tetanus and hydrophobia, which are believed to be of toxæmic origin.

In contrasting the clinical features of myxœdema with those of Graves's disease, the following points are called attention to:—

In Exophthalmic Goitre.

1. The gland is hypertrophied.
2. Young women are affected.
3. There is hyperexcitability, nervousness, tremors, and unrest.
4. The skin is soft, smooth, moist, with excessive perspiration and diminished electrical resistance.
5. There are subjective sensations of heat (flushing) with easily produced elevations of temperature.
6. The pulse is frequent.
7. There is marked emaciation.
8. Amenorrhœa is common.
9. Marriage and pregnancy may cure.
10. Mental disorder more usually takes the form of acute mania.

In Myxœdema.

1. It is atrophied.
2. Older women suffer.
3. The patient is stolid and placid.
4. The skin is dry, harsh, rough, no sweating, and increased electrical resistance.
5. There is a feeling of coldness with subnormal and unvarying temperature.
6. It is slow or infrequent.
7. There is increase in weight and bulk.
8. Menorrhagia is more common.
9. Pregnancy very rare, but when it occurs patients get worse.
10. Melancholic delusions are more often met with.

We next come to consider the beneficial effects of partial thyroidectomy.

Stierlin collected 29 cases in which portion of the gland was removed, and in 22 of them complete recovery ensued. Wette collected 26, that he considers "undoubted cases," in which removal of portion of the gland was followed by considerable improvement, and often by a distinct cure—in fact, he says that the

altered gland is the cause of the disease, and that operation is the only satisfactory treatment.

Putnam, of Boston, has found removal successful in curing the disease, but says that while there is little risk of death, there is great risk of considerable temporary prostration and laryngeal paresis.

Friberg, of Cincinnati, recommends it in severe cases that will not yield to medical treatment.

Booth and Newton, of New York, have also recorded satisfactory results from operation.

There is not much to be said either for the beneficial effects of medical treatment directed towards reducing the size of the gland, or to the fact that the introduction of thyroid juice into the system in health produces certain effects similar to symptoms of exophthalmic goitre. Certainly pressure, ice, and the inunction of red iodide of mercury externally, and the administration of belladonna and ergot internally, all of which may be said to aid in reducing the size of the swelling or in diminishing the secretion, have been credited with at least as good results as any other therapeutic agents. The administration of the juice in health has been followed by relaxation of the arterioles, rapid heart action, diuresis, slight rise of temperature, &c.; and an overdose in myxœdema has produced flushing, excessive perspiration, muscular spasm, tremor, tumultuous heart action, rapid pulse, and death from cardiac failure.

Now, while all these arguments seem more or less to favour what I may call the "glandular theory," and to prove that the goitre is the cause of the other symptoms, lest anyone should be led to adopt this view from the plausible arguments set forth, and to consider that we should at once hand over our cases to the surgeon for the purpose of curing them, I will touch shortly on the other side of the question.

In a number of cases of exophthalmic goitre a complete cure has followed the removal of a nasal polypus, or the cauterisation of a thickened nasal mucous membrane, while some instances of complete recovery are recorded in which practically no treatment at all has been adopted. Guttman about 12 years ago practised thyroidectomy without any result. Kocher, of Berne, had a case which died the night after operation, and four cases in which no result was notified, and he says the patients have as little chance of recovery from operation as if they suffered from malignant goitre. Strümpell in one case partially removed the gland, and

the patient died. While Mannheim, as the result not only of great personal observation, but also of extensive research in the literature of the subject, considers that unless for urgent dyspnoea operation should not be undertaken ; and he asserts that only twelve of Wette's cases were genuine Graves's disease, and of these, three were unsuccessfully operated on, two were moderately successful, and the others were doubtful. Four of his own forty-one cases were operated on, and only one seems to have obtained partial benefit. He says the most successful treatment is a dietetic and hygienic one, which insures physical and mental rest in the widest sense, and that experience shows electricity to be useful ; but the utmost that therapeutics can effect is a perceptible improvement, while a complete cure is beyond it.

In conclusion, it may be of interest to mention that this disease has been observed in animals. Two cases are reported from St. Petersburg—the first, that of a four-year old thoroughbred horse, which after a long gallop exhibited abnormally strong and frequent arterial pulsations, cardiac palpitations, and progressive weakness ; the thyroid body was found tumefied, and sixteen days after marked double exophthalmos appeared, and after a month's illness the colt died. The second case was that of a small pet bitch, 7 years old, in which the cardinal symptoms were present, but were cured with iodine in three months. In the Veterinary Reports for the Kingdom of Saxony, 1890, Roder cites the case of a cow in which palpitations, arterial pulsations, enlarged thyroid, and intense double exophthalmos had existed for four years. Finally, a somewhat doubtful case has been reported by Professor Cadiot, of Paris, in which a gelding exhibited cardiac palpitation, a bounding pulse, great hypertrophy of the thyroid gland, but no exophthalmos. A reference to these interesting cases will be found in the *Lancet* of August 20th, 1892.

MEDICAL FEES IN FRANCE.

IN a recent case of a disputed fee, brought before the tribunal of the Seine, the Court ruled that "in a question of medical fees the points to be regarded are the pecuniary position of the patient and the repute which the doctor may have acquired through his labours and discoveries."